

Appl. No. 10/708,401
Amdt. dated May 30, 2005
Reply to Office action of April 12, 2005

AMENDMENTS TO THE CLAIMS

5 Claim 1 (currently amended) A method for detecting an unbalanced disc with a compact disc (CD) drive, the CD drive comprising a pick-up head for reading data stored on an optical disc, ~~and~~ a motor for rotating the optical disc, and a photoelectric sensor for receiving a reflected laser beam, the method comprising the following steps:

- 10 (a) adjusting a rotary speed of the motor so that a vibration frequency of the CD drive is approximately equal to a resonance frequency of a coil of the pick-up head;
- (b) when the vibration frequency of the CD drive is approximately equal to the resonance frequency of the coil of the pick-up head, ~~detecting if~~ comparing a voltage value of a central error (CE) signal ~~is larger than~~ with a threshold voltage; ~~and~~
- 15 (c) determining if the optical disc is an unbalanced disc according to a result of step (b)-; and
- (d) generating the CE signal of step (b) by calculating an intensity difference between a left region and a right region of the
- 20 photoelectric sensor.

25 Claim 2 (original) The method of claim 1 wherein the method further comprises converting an optical signal, which is reflected from the optical disc and received by the pick-up head, into the voltage value.

Claim 3 (original) The method of claim 2 wherein the CE signal is generated according to the optical signal that is reflected from the optical

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disc and received by the pick-up head.

Claim 4 (original) The method of claim 1 wherein when the voltage value
of the CE signal is larger than the threshold voltage, the optical disc is
5 determined as an unbalanced disc.

Claim 5 (cancelled)

Claim 6 (new) The method of claim 1 wherein generating the CE signal does not
10 comprise calculating an intensity difference between an upper region and a lower region of
the photoelectric sensor.

Claim 7 (new) The method of claim 6 wherein generating the CE signal further comprises
not utilizing a tracking error (TE) signal.

Claim 8 (new) The method of claim 1 further comprising generating the CE signal as a
15 voltage signal according to and proportional to the deviation of the pick-up
head relative to a central position of the photoelectric sensor, and generating the voltage
signal being larger when the left region or the right region receives more reflected laser
beam than at the central position of the photoelectric sensor.

20 Claim 9 (new) A system capable of performing detection of an unbalanced
disc with a compact disc (CD) drive, the system comprising:

a pick-up head for reading data stored on an optical disc;
a motor for driving the optical disc to rotate at a certain rotary speed;
a means for detecting and adjusting the rotary speed of the motor to a
25 frequency which is approximately equal to a resonance frequency of
a coil of the pick-up head;
a photoelectric sensor for receiving a reflected laser beam; and

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5 a control circuit for generating a central error (CE) signal by calculating an intensity difference between a left region and a right region of the photoelectric sensor, the CE signal being for determining whether the optical disc is an unbalanced disc by comparing a voltage value of the CE signal with a threshold voltage.

Claim 10 (new) The system of claim 9 wherein the photoelectric sensor converts an optical signal being reflected from the optical disc into the voltage value.

10 Claim 11 (new) The system of claim 10 wherein the control circuit generates the CE signal according to the optical signal that is reflected from the optical disc and received by the pick-up head.

15 Claim 12 (new) The system of claim 9 wherein the control circuit generates the CE signal by calculating an intensity difference between the left region and the right region of the photoelectric sensor, checks if the voltage value of the CE signal is larger than the threshold voltage, and the system determines the optical disc to be an unbalanced disc if the voltage value of the CE signal is larger than the threshold voltage.

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Claim 13 (new) The system of claim 9 wherein the control circuit generates the CE signal without calculating an intensity difference between an upper region and a lower region of the photoelectric sensor.

25 Claim 14 (new) The system of claim 13 wherein the control circuit generates the CE signal without utilizing a tracking error (TE) signal.

Claim 15 (new) The system of claim 9 wherein the control circuit generates the CE

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signal as a voltage signal according to and proportional to the deviation of the pick-up head relative to the central position of the photoelectric sensor, and the voltage signal being larger when the left region or the right region receives more reflected laser beam than the central position of the photoelectric sensor.

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